

8/26/2019

[Dart Hawkesbury] Job Sheet - Renwick, Jennifer

NCR 7510

012131



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

SWA6A-6

Job Sheet 199502



Deviation

Part No: SWA6A-6

Job Qty: 1 pcs

Part Name: Electric Swivel 6,000 lb Safe Work Load (2,721 kg)



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 8/26/19

Job Tracking No:

Created By: Jennifer Renwick

Due Date: 10/16/19

Type: SOLD

Description: Order 19052

Note: DWG SWA6A Rev. E IPP Rev. A 18.05.24 new issue DP Verify DD/IPP Rev.B 19.02.27 drawing revision DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
95	External Load - 1	1 pcs	10/16/19		0.00	1.00	External Load - 1		Muhl
							External Load - 2		
							External Load - 3		
100	External Load - 2 - B4B	1 pcs	10/16/19		0.00	1.00	External Load - 1 - B4B		AP 2019/09/27 Muhl 2019/9-27
							External Load - 2 - B4B		
							External Load - 3 - B4B		
120	QC 5	1 pcs	10/16/19		0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		
130	Packaging 3-1 - Stock - B4B	1 pcs	10/16/19		0.00	0.00	Packaging 3 - 1 - B4B		



Container No: S216961



Part: SWA6A-6

Job No: 199502

Serial No/Batch: S216961

Revision: G

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 09/26/19

DAS
30
9-89

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				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
135 DC - 1 - B4B	1 pcs	10/16/19	0.00 0.00	DC - 1 - B4B	DAG
				DC - 2 - B4B	21
140 QC 21 - FG	1 pcs	10/16/19	0.00 0.00	QC 21 - FG - 21	9-39
				QC 21 - FG - 70	DAG
				QC 21 - SA - 53	21

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Part Op 95 - Issue S/N.

9-39

Descriptions: 100 - (Small Fab) -Assemble as per DWG. Sheet 1 ***All assembly to be done in accordance with SWA swivel manual***
Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG. Laser engrave dart logo as per DWG.

120 - (QC5- Inspect part completeness to step on W/O) Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG.

130 - (Identify as per dwg & Stock Location: *GA ALPIN*) Bag and tag

135 - (Document Control) Photocopy blue file OM & OOPM-SWA6A Rev G

140 - (QC21- Final Inspection - Work Order Release)

Loctite 242 (S186572)

Loctite B20 (S194792)

Saf-T-gel (M138973)

Aeroshell-grease No.7 (M138724)

Silicone ge (M138208127)

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Job BOM

Part / Item	Component Name	Quantity	Operation	Container
188-FPSS-1032-3/8	Set Screw	1 Ea (1 ea)	95-External Load - 1	5037669
04121-764A5	6 Conductor 14 AWG,	6 ft (6 ea)	100-External Load - 2 - B4B	5177426
188-FSCS-1032-5/8	Flat socket cap Screw	4 Ea (4 ea)	100-External Load - 2 - B4B	5199362
C45-15-13	Bushing for SWA6A	1 Ea (1 ea)	100-External Load - 2 - B4B	5192687
D2728-1	Dart Logo Label Small	1 pcs (1 ea)	100-External Load - 2 - B4B	5139013 52101
SWA6A-110	Lower End	1 pcs (1 ea)	100-External Load - 2 - B4B	5046092
SWA6A-1100	Upper Bearing	1 pcs (1 ea)	100-External Load - 2 - B4B	5193969
SWA6A-1200	Lower DU Bearing	1 Ea (1 ea)	100-External Load - 2 - B4B	5196410
SWA6A-1300	Lower Thrust Bearing	1 Ea (1 ea)	100-External Load - 2 - B4B	5196384
SWA6A-1400	Circlip Internal	1 Ea (1 ea)	100-External Load - 2 - B4B	5176003
SWA6A-1800	Cover	1 pcs (1 ea)	100-External Load - 2 - B4B	5159099
SWA6A-1900	1/4" Female Spade Connector	8 Ea (8 ea)	100-External Load - 2 - B4B	5192706
SWA6A-2000	1/8" Female Spade Connector	4 Ea (4 ea)	100-External Load - 2 - B4B	5097727
SWA6A-210	Upper End	1 pcs (1 ea)	100-External Load - 2 - B4B	5211876
SWA6A-300	Bearing Housing	1 pcs (1 ea)	100-External Load - 2 - B4B	5161577
SWA6A-400	Thrust Washer	1 pcs (1 ea)	100-External Load - 2 - B4B	5194935
SWA6A-500	Semi Rings	1 pcs (1 ea)	100-External Load - 2 - B4B	5192010
SWA6A-600	Collar	1 pcs (1 ea)	100-External Load - 2 - B4B	5190894
SWA6A-700A	Wire Clamp	2 pcs (2 ea)	100-External Load - 2 - B4B	5147653
SWA6A-800C P	Connector Bushing	1 pcs (1 ea)	100-External Load - 2 - B4B	5029421
SWA6A-900D	Rotary Contact	1 Ea (1 ea)	100-External Load - 2 - B4B	5072693

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
95-External Load - 1	188-FPSS-1032-3/8	1	78	0
100-External Load - 2 - B4B	04121-764A5	6	249	0
	188-FSCS-1032-5/8	4	106	0
	C45-15-13	1	8	0
	D2728-1	1	0	0
	SWA6A-110	1	2	0
	SWA6A-1100	1	10	0
	SWA6A-1200	1	20	0
	SWA6A-1300	1	13	0
	SWA6A-1400	1	30	0
	SWA6A-1800	1	10	0
	SWA6A-1900	8	124	0
	SWA6A-2000	4	567	0
	SWA6A-210	1	0	0
	SWA6A-300	1	13	0
	SWA6A-400	1	30	0
	SWA6A-500	1	13	0
	SWA6A-600	1	10	0
	SWA6A-700A	2	22	0
	SWA6A-800C P	1	0	0
	SWA6A-900D	1	2	0

Part Specifications

Specifications could not be found.

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P/N	Revision	Drawing Specified Wire	Acceptable Alternate Wire
C2	2	MIL-C-27500 11-14416	N/A
C3	2	MIL-C-27500 11-14417	N/A
C10	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C15	2	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C20	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C45	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C60	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C250	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-4	3	EL 414-ARTIC 4/14	Texcan 01121-744A5
SWA6A-2	E	Texcan 01121-724AM	N/A
SWA6A-3	E	Texcan 01121-734A5 or 01004-08-047	N/A
SWA6A-4	E	Texcan 01121-744A5	N/A
SWA6A-6	E	Texcan 04121-764A5	N/A
SWA6A-8	E	Texcan 12701-08-014 or McMaster 7081K38	N/A
SWA10A-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-4	3	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA10A-6	3	EL 616 ARTIC	Texcan 04121-764A5
SWA10A-8	3	Polar Wire 30806	Texcan 12701-08-014 or McMaster 7081K38
SWA15A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA15A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SWA15A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38
SAW25A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SAW25A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SAW25A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38



Electric Swivel
SWA6A

Work Order 199502

Customer Order 19052

Number of Wires 6

Date 2019-9-25

Serial Number S216961

Number of Cycles	Load (Lbs.)	Action	Pass/Fail
1	6,000	Check for Conductivity against all wires.	- Pass
1	6,000	Check all wires for grounding against swivel body.	- Pass
1	3,000	Check for Conductivity against all wires.	- Pass
1	3,000	Check all wires for grounding against swivel body.	- Pass
1	1,500	Check for Conductivity against all wires.	- Pass
1	1,500	Check all wires for grounding against swivel body.	- Pass
1	0	Check for Conductivity against all wires.	- Pass
1	0	Check all wires for grounding against swivel body.	- Pass

Test Conducted By: Michel Lalonde

Technician

Submit

Signature: Sylvie Poirier
QC 5 Small FAB / QA

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>199502</u> Part No. <u>SWA### Swivels</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐									
Date : <u>2019/09/27</u>		Step #: _____		QTY Effective : _____		MRB (QSI042) Approval <i>M. Lee</i> Feb 01, 2018							
Description Work Order Deviation - Use a combination of heatshrink tubing and RTV Silicone to create a watertight seal around all electrical connections. - Use a D2728-1 Placard in place of the laser engraved Dart logo				Disposition These deviations are acceptable to carry out on the following swivels: - SWA3 - SWA6A - SWA10A - SWA15A - SWA25A - PSWA25A - HH40-Q280002 <i>M. Lee</i> There is no impact on fit, form or function.				Completed By <u>A. PATRY</u> Lead hand / Supervisor Approval Verification DAS 30 SEP 27 2019 QC / QA Coordinator Approval <u>68</u> SEP 27 2019					
Root Cause <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"> Environment ☐ Design ☒ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ </td> <td style="width:50%;"> No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☒ Process Improvement ☒ Manufacturing Process ☐ Past Due ☐ </td> </tr> </table>				Environment ☐ Design ☒ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☒ Process Improvement ☒ Manufacturing Process ☐ Past Due ☐	FAULT CATEGORY <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"> Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ </td> <td style="width:33%;"> Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ </td> <td style="width:33%;"> Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ </td> <td style="width:33%;"> Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐ </td> </tr> </table>				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
Environment ☐ Design ☒ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☒ Process Improvement ☒ Manufacturing Process ☐ Past Due ☐												
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OTHER : _____													

Entered: 7R Date: Oct 23/19



NCR No. 19-7510 **WORK ORDER NON-CONFORMANCE / ROUTE UPDATE**

Route update only ☐

Job: <u>199502</u> Part No. <u>C series hooks and SWA Swivels</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☒ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐		
Date: <u>2019/09/27</u>	Sequence #:	QTY Affected: <u>1</u>		MRB (QSI042) May, 9 2019 <i>M. Lee</i>
Description Work Order Deviation The electrical wires listed under "Acceptable Alternate Wire" on the attached sheet are acceptable to use in place of the "Drawing Specified Wire"		Disposition This deviation is acceptable. No change to fit form or function. The job route must specify the wire that is called out on the drawing The inventory P/N must reflect the same P/N that was received from a vendor		Completed By <u>in-09-27</u> A. PATRY Lead hand / Supervisor DAS 30 SEP 27 2019 9-89
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☒ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☒ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread		
Other/Details:				